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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,236	12/09/2003	Satyabrata Chakrabarti	LUC-285/Chakrabarti 5-6	4890

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Carmen B. Patti
Patti & Brill, LLC
44th Floor
One North LaSalle Street
Chicago, IL 60602

EXAMINER	
MAGLO, EMMANUEL K	

ART UNIT	PAPER NUMBER
2609	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/731,236	CHAKRABARTI ET AL.	
	Examiner	Art Unit	
	Emmanuel Maglo	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's election to proceed with prosecution of claims 11-37 is acknowledged in this divisional application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 11-37 are rejected under 35 U.S.C. 102(e) as being unpatentable over Mustajärvi et al. **US 6512756 B1**, herein and after referred to as Mustajärvi.

Consider claim 11, Mustajärvi relates to packet radio networks in general, and in particular to supporting mobility in packet radio networks. Mustajärvi discloses the claimed invention where a single board computer for providing general packet radio services functionality, which is required for each call being serviced, represented by SGSN (Fig. 1) and a line card processor for providing general packet radio services functionality, GGSN (Fig. 1), which is required for each packet being serviced. The

internal signaling and the call processing functionalities respectively of the GGSN and the SGSN can be integrated into the same physical node, (Col 7 lines 66 and 67) and further by providing all GPRS features in one computer, (Col 8 lines 14 and 16).

Consider claim 12, and as applied to claim 11 above, Mustajärvi discloses the general packet radio services support node wherein the general packet radio services support node functions as a serving general packet radio services support node, as in (Fig. 1) where the GPRS support node SGSN is a node which serves the MS, (Col 7 lines 21-29).

Consider claim 13, and as applied to claim 12 above, Mustajärvi discloses the general packet radio services support node wherein the single board computer supports radio resource management in that, (Col 7 lines 22-27), each support node SGSN controls a packet data service within the area of one or more cells in a cellular packet radio network, and therefore, each support node SGSN is connected (Gb interface) to a certain local element of the GSM system.

Consider claim 14, and as applied to claim 13 above, Mustajärvi discloses general packet radio services support node wherein the radio resource management comprises all cell selection management by, (Col 7 lines 47-50), transmitting location information or receiving a request for paging a GPRS subscriber, via one or several base stations i.e. cells. Accordingly the mobile station MS located in a cell communicates with a base station BTS over a radio interface and further with the support node SGSN to the service area of which the cell belongs through the mobile communication network.

Consider claim 15, and as applied to claim 13 above, Mustajärvi discloses the general packet radio services support node wherein the radio resource management comprises call path management as a logical link between the MS and the is created when a user attaches to a GPRS network. The path created between the MS and the SGSN, and temporary indicated with the TLLI identifier is managed by the SGSN in connection with the establishment of the link, (Col 2 lines 56-65).

Consider claim 16, and as applied to claim 13 above, Mustajärvi discloses the general packet radio services support node wherein the radio resource management comprises U_m interface management, see Fig.1.

Consider claim 17, and as applied to claim 12 above, Mustajärvi discloses the general packet radio services support node wherein the single board computer supports authentication for having stored information set related to MM states, namely MM contexts in the SGSN, and subsequent to routing area update as in (Col 4 lines 38-44).

Consider claim 18, and as applied to claim 12 above, Mustajärvi discloses the general packet radio services support wherein the single board computer supports mobility management for the SGSN is a node which serves the mobile station MS. thus (Col 7 lines 50-53), when the MS attaches to the GPRS network, i.e. in a GPRS attach procedure, the SGSN creates a mobility management context (MM context) containing information related to the mobility and security of the MS, for example.

Consider claim 19, and as applied to claim 18 above, Mustajärvi discloses the general packet radio services support wherein the mobility management comprises line management, (Col 7 lines 54-57), for the SGSN creates, in connection with a PDP

activation procedure, a PDP context (packet data protocol) which is used for routing purposes within the GPRS network with the GGSN which the GPRS subscriber uses.

Consider claim 20, and as applied to claim 18 above, Mustajärvi discloses the general packet radio services support wherein the mobility management comprises logical link establishment, maintenance and release; (see abstract) for a logical link established between a mobile station (MS) and a serving packet radio support node (SGSN), maintained temporary as a Temporary Logical Link Identity, TLLI, for update of the routing area.

Consider claim 21, and as applied to claim 12 above, Mustajärvi discloses the general packet radio services support node wherein the single board computer supports an encryption function, (Col 2 lines 5-9), the L3MM protocol supports the functionality of mobility management, e.g. GPRS Attach, GPRS Detach, security, routing update, location update, activation of a PDP context, and deactivation of a PDP context.

Consider claim 22, and as applied to claim 12 above, Mustajärvi discloses the general packet radio services support node wherein the single board computer supports a compression function, (Col 2 lines 10-14), Subnetwork Dependent Convergence Protocol (SNDCP) supports transmission of protocol data units (N-PDU) of a network layer between an MS and an SGSN. The SNDCP layer, for example, manages ciphering and compression of N-PDUs.

Consider claim 23, and as applied to claim 12 above, Mustajärvi discloses the general packet radio services support node wherein line card processor supports one or more of routing and tunneling functions for, (Col 7 lines 58-70), the GPRS gateway

support node GGSN connects an operator's GPRS network to other operators' GPRS systems and to data networks 11-12, such as an inter-operator backbone network, IP network (Internet) or X.25 network. The GGSN includes GPRS subscribers' PDP addresses and routing information, i.e. SGSN addresses. Routing information is used for tunneling protocol data units PDU from data network 11 to the current switching point of the MS, i.e. to the serving SGSN. Functionalities of the SGSN and GGSN can be integrated into the same physical node.

Consider claim 24, and as applied to claim 11 above, Mustajärvi discloses the general packet radio services support node wherein the general packet radio services support node functions as a gateway general packet radio services support node, for different subnetworks are connected to an external data network, e.g. to a public switched data network PSPDN, via GPRS gateway support nodes GGSN so the GGSN includes GPRS subscribers' PDP addresses and routing information, i.e. SGSN addresses, Functionalities of the SGSN and GGSN can be integrated into the same physical node. (Col 7 lines 63-70).

Consider claims 25 and 26, and as applied to claim 24 above, Mustajärvi discloses the general packet radio services support node wherein the single board computer supports session management functionality in that, (Col 7 lines 63-70), the gateway support nodes GGSN by containing the GPRS subscriber's PDP addresses and routing information, tunnels the PDU for the current switching point. In so doing the home location address register HLR maps each PPD type and PPD address into one or more GGSns, (Col 8 lines 3-7).

Consider claim 27, and as applied to claim 26 above, Mustajärvi discloses the general packet radio services support node wherein the line card processor supports access control functionality in that the GPRS gateway support node GGSN connects an operator's GPRS network to other operators' GPRS systems and to data networks 11-12, such as an inter-operator backbone network, IP network (Internet) or X.25 network, Fig 1.

Consider claim 28, and as applied to claim 24 above, Mustajärvi discloses the general packet radio services support node wherein the line card processor supports one or more of routing and tunneling functions, in that, (Col 7 lines 58-70), the GPRS gateway support node GGSN connects an operator's GPRS network to other operators' GPRS systems and to data networks 11-12, such as an inter-operator backbone network, IP network (Internet) or X.25 network. The GGSN includes GPRS subscribers' PDP addresses and routing information, i.e. SGSN addresses. Routing information is used for tunneling protocol data units PDU from data network 11 to the current switching point of the MS, i.e. to the serving SGSN. Functionalities of the SGSN and GGSN can be integrated into the same physical node.

Consider claims 29 and 35, Mustajärvi relates to packet radio networks in general, and in particular to supporting mobility in packet radio networks and a method for using the apparatus of claim 11 in that a single board computer for providing general packet radio services functionality, which is required for each call being serviced, represented by SGSN (Fig. 1) is the first computing device and a line card processor for

providing general packet radio services functionality, GGSN (Fig. 1), which is required for each packet being serviced is the second computing device.

Consider claim 30, and as applied to claim 29 above, the method as recited in claim 29 wherein the first computing device is a single board computer as discussed above in claim 11

Consider claim 31, and as applied to claim 29 above, the method as recited in claim 29 wherein the first computing device is a line card processor as discussed above in claim 11.

Consider claim 32, and as applied to claim 29 above, wherein the step of providing a general packet radio services support node comprises the step of providing the general packet radio services support node which functions as a serving general packet radio services support node as in (Fig. 1) where the GPRS support node SGSN is a node which serves the MS, (Col 7 lines 21-29).

Consider claim 33, the method as recited in claim 32 wherein the step of supporting general packet radio services functionality which is required for each call being serviced comprises the step of supporting radio resource management by the first computing device, (Col 7 lines 22-27), each support node SGSN controls a packet data service within the area of one or more cells in a cellular packet radio network, and therefore, each support node SGSN is connected (Gb interface) to a certain local element of the GSM system.

Consider claim 34, the method as recited in claim 33 wherein the step of supporting general packet radio services functionality which is required for each packet being serviced comprises the step of supporting at least one encryption, compression, routing and tunneling functions by the second computing device, for the single board computer supports an encryption function, (Col 2 lines 5-9), the L3MM protocol supports the functionality of mobility management, e.g. GPRS Attach, GPRS Detach, security, routing update, location update, activation of a PDP context, and deactivation of a PDP context, as well as a compression function, (Col 2 lines 10-14), Subnetwork Dependent Convergence Protocol (SNDCP) supports transmission of protocol data units (N-PDU) of a network layer between an MS and an SGSN. The SNDCP layer, for example, manages ciphering and compression of N-PDUs. More so, the second computing device supports routing and tunneling functions for, (Col 7 lines 58-70), the GPRS gateway support node GGSN connects an operator's GPRS network to other operators' GPRS systems and to data networks 11-12, such as an inter-operator backbone network, IP network (Internet) or X.25 network. The GGSN includes GPRS subscribers' PDP addresses and routing information, i.e. SGSN addresses. Routing information is used for tunneling protocol data units PDU from data network 11 to the current switching point of the MS, i.e. to the serving SGSN. Functionalities of the SGSN and GGSN can be integrated into the same physical node.

Consider claim 36, the method as recited in claim 35 wherein the step of supporting general packet radio services functionality which is required for each call being serviced comprises the step of supporting session management by the second

computing device. The line card processor, the second computing device, provides general packet radio services session management support functionality via GGSN (Fig. 1), and by containing the GPRS subscriber's PDP addresses and routing information, tunnels the PDU for the current switching point. In so doing the home location address register HLR maps each PPD type and PPD address into one or more GGSns, (Col 8 lines 3-7).

Consider claim 37, the method as recited in claim 35 wherein the step of supporting general packet radio services functionality which is required for each packet being serviced comprises the step of supporting at least one of address translation, access control, routing and tunneling functionality by the second computing device. The line card processor, the second computing device, provides general packet radio services session management support functionality via GGSN (Fig. 1), and by containing the GPRS subscriber's PDP addresses and routing information, tunnels the PDU for the current switching point. In so doing the home location address register HLR maps each PPD type and PPD address into one or more GGSns, (Col 8 lines 3-7).), the GPRS gateway support node GGSN connects an operator's GPRS network to other operators' GPRS systems and to data networks 11-12, such as an inter-operator backbone network, IP network (Internet) or X.25 network. The GGSN includes GPRS subscribers' PDP addresses and routing information, i.e. SGSN addresses. Routing information is used for tunneling protocol data units PDU from data network 11 to the current switching point of the MS, i.e. to the serving SGSN.

CONCLUSION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Maglo whose telephone number is (571)270-1854. The examiner can normally be reached on Monday - Friday 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Garber can be reached on (571)270-1202. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EM